Claims:

1. An optical switch comprising:

an optical channel, wherein the optical channel comprises:

an input optical fiber for receiving a beam of light;

an output optical fiber;

a first support device connected to the input optical fiber for creating a bend in the input optical fiber; and

a second support device connected to the output optical fiber for creating a bend in the output optical fiber, wherein the bends in the input and output optical fibers direct the beam of light from the input optical fiber to the output optical fiber.

2. The optical switch of claim 1, further comprising a mirror for receiving the beam of light from the input optical fiber and for reflecting the beam of light to the output optical fiber.

3. The optical switch of claim 1, wherein the first support device comprises a first pair of actuators, wherein a first actuator in the first pair of actuators generates a force along a first axis and a second actuator in the first pair of actuators generates a force along a second, perpendicular axis to create the bend in the input optical fiber.

4. The optical switch of claim 3, wherein the second support device comprises a second pair of actuators, wherein a third actuator in the second pair of actuators generates a force along a first axis and a fourth actuator in the second pair of actuators generates a force along a second, perpendicular axis to create the bend in the output optical fiber.

5. The optical switch of claim 3, wherein the first support device further comprises a first support plate connected to the input optical fiber, and wherein the forces generated by the first pair of actuators rotate the first support plate to create the bend in the input optical fiber.

6. The optical switch of claim 4, wherein the second support device further comprises a second support plate connected to the output optical fiber, and

wherein the forces generated by the second pair of actuators rotate the second support plate to create the bend in the input optical fiber.

7. An optical switch, comprising:

a plurality of input optical fibers each for receiving a beam of light;

a plurality of output optical fibers;

a first array of support devices each connected to a respective one of the input optical fibers, wherein the support devices in the first array create bends in respective input optical fibers;

a second array of support devices each connected to a respective one of the output optical fibers, wherein the support devices in the second array create bends in respective output optical fibers, wherein the bends in the input and output optical fibers direct the beams of light from the input optical fibers to respective output optical fibers.

8. The optical switch of claim 7, wherein each support device in the first array of support devices comprises a first pair of actuators, wherein a first actuator in each first pair of actuators generates a force along a first axis and a second actuator in each first pair of actuators generates a force along a second, perpendicular axis.

9. The optical switch of claim 8, wherein each support device in the second array of support devices comprises a second pair of actuators, wherein a third actuator in each second pair of actuators generates a force along a first axis and a fourth actuator in each second pair of actuators generates a force along a second, perpendicular axis.

10. The optical switch of claim 9, further comprising:

a first plurality of bands of material wherein each band of material in the first plurality surrounds a portion of an exterior surface of a respective one of the input optical fibers; and

a second plurality of bands of material wherein each band of material in the second plurality surrounds a portion of an exterior surface of a respective one of the output optical fibers.

11. The optical switch of claim 10, wherein the forces generated by each first pair of actuators are applied to a respective one of the bands of material in the first plurality to create a bend in a respective one of the input optical fibers.

12. The optical switch of claim 11, wherein the forces generated by each second pair of actuators are applied to a respective one of the bands of material in the second plurality to create a bend in a respective one of the output optical fibers.

13. The optical switch of claim 8, wherein each support device in the first array of support devices further comprises a first support plate connected to a respective one of the input optical fibers, wherein the forces generated by the first pairs of actuators rotate respective first support plates to create bends in respective input optical fibers.

14. The optical switch of claim 9, wherein each support device in the second array of support devices further comprises a second support plate connected to a respective one of the output optical fibers, wherein the forces generated by the second pairs of actuators rotate respective second support plates to create bends in respective output optical fibers.

15. The optical switch of claim 7, further comprising a mirror for receiving the beams of light from the input optical fibers and for reflecting the beams of light into respective output optical fibers.

16. A method for directing a beam of light from an input optical fiber to an output optical fiber in an optical switch, the method comprising the steps of:

transmitting the beam of light into the input optical fiber;

selectively actuating a first support device connected to the input optical fiber to create a bend in the input optical fiber; and

selectively actuating a second support device connected to the output optical fiber to create a bend in the output optical fiber, wherein the bends in the input and output optical fibers direct the beam of light from the input optical fiber to the output optical fiber.

17. The method of claim 16, wherein the step of selectively actuating a first support device connected to the input optical fiber to create a bend in the input optical fiber comprises selectively actuating a first actuator and a second actuator to create a bend in the input optical fiber, wherein the first actuator generates a force along a first axis and the second actuator generates a force along a second, perpendicular axis.

18. The method of claim 17, wherein the step of selectively actuating a second device connected to the output optical fiber to create a bend in the output optical fiber comprises selectively actuating a third actuator and a fourth actuator to create a bend in the output optical fiber, wherein the third actuator generates a force along a first axis and the fourth actuator generates a force along a second, perpendicular axis.

19. The method of claim 18, wherein the forces generated by the first and second actuators are applied to a first band of material surrounding a portion of an exterior surface of the input optical fiber and the forces generated by the third and fourth actuators are applied to a second band of material surrounding a portion of an exterior surface of the output optical fiber.

20. The method of claim 19, wherein the forces generated by the first and second actuators are applied to a first support plate connected to the input optical fiber to rotate the first support plate and create the bend in the input optical fiber, and the forces generated by the third and fourth actuators are applied to a second support plate connected to the output optical fiber to rotate the second support plate and create the bend in the output optical fiber.